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Vol. 6.

July 25, 1937

No. 11

In connection with the project, Supplementary Irrigation in the Northern Great Plains, in cooperation with the Rural Rehabilitation Division of the Resettlement Administration, Carl Rohwer consulted with Resettlement Administration representatives, county agents, prospective irrigators, and others in Perkins, Corson, and Dewey counties, S. Dak., and inspected irrigation projects, with a view to determining the possibilities of building reservoirs, sinking wells, or pumping from rivers for supplemental irrigation.

In Jones, Lyman, and Mallette counties, S. Dak., Dean C. Muckel made estimates of the cost of providing irrigation water supplies for individual farms on the White River. Pumping directly from the river was found to be feasible in most cases although on a few of the areas sinking of shallow wells was recommended. The tracts in this region which it is proposed to irrigate range from 20 to 90 acres and the estimated cost of developing a water supply varied from \$7.50 to \$20.00 per acre.

M. R. Lewis supervised the completion of reports for the South Dakota State Planning Board on "Supplementary Irrigation in Western South Dakota" and the "Stock-Water Problem in Western South Dakota." These reports are based on data developed by research technicians employed by the National Resources Board, assisted by the Land Utilization Division of the Resettlement Administration.

W. W. McLaughlin called a conference of snow survey workers of the Division of Irrigation, at Salt Lake City June 27-29, at which James C. Marr, George D. Clyde, L.T. Jessup, R.A. Work, R.L. Parshall, Dr. J.E. Church, and Carl Elges were present. A moisture-proof snow sample weighing balance designed by Mr. Parshall, which is believed to be superior in some respects to the present tubular balance, was described at the meeting.

At the regional meeting of the American Association for the Advancement of Science, and Associated Societies, at Denver, Colo., J.C. Marr presented papers on "Present Status of Snow Surveying and Irrigation Water Supply Forecasting in the West," "Melting versus Weight Method for Determining Snow Density," and "Tentative Design of Electric Weighing Scale for Snow Sampler". R.L. Parshall presented a paper on "Irrigation Water Resources of Colorado" before the A.A.A.S. meeting, and a paper entitled "Laboratory Measurement of Evapo-Transpiration Losses" before the joint meeting of the American Foresters and American Geophysical Union.

Dean W. Bloodgood prepared an article on "Irrigation of Pre-historic Terraces" which was published in the June issue of Conservation Activities.

A test was initiated by Colin A. Taylor on a navel orange orchard at North Pomona, Calif., in an attempt to moderate air temperature by irrigation and reduce the "June drop" of small oranges. Ten rows of trees were given enough extra irrigations to keep the soil surface moist throughout June. Thermometer shelters were set up and comparisons made between the "moist" rows and the untreated area which has a loose dry soil mulch. Sudan grass was sown and a fair stand was obtained which reached a height of four inches by June 30. The bloom was late this year and it was anticipated that the fruit would not reach a size beyond the "June drop" stage until late in July. It was also highly probable that some high temperatures would occur; hence it is expected that an excellent chance will be afforded to make a thorough test of the possibilities in this method.

At the annual meeting of the American Society of Agricultural Engineers, at Urbana, Ill., June 23, M.R. Lewis gave a talk on "Water Conservation and Supplementary Irrigation in the Northern Great Plains". At the same meeting Leslie Bowen discussed "The Irrigation of Field Crops on the Great Plains".

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During June the Central District Drainage Camps completed a total of 3,398,815 square yards of ditch cleaning using 24,432 man-days; 1,869,130 cubic yards of excavation and embankment, using 23,309 man-days 41,501 lineal feet of tile reconditioning using 5,376 man-days; and 12,532 man-days were used on structures, surveys, and miscellaneous work. Local cooperation for the month amounted to approximately \$108,000. As part of the general reduction in CCC Camps, one drainage camp at Sidney, Ohio, and one at Rockport, Mo. are being abandoned.

On June 17, 18 and 19, a conference of superintendents and engineers of the Ohio camps was held at the Defiance Drainage Camp. J.G. Sutton and F.F. Shafer, of the Bureau and Prof. V.L. Overholt of Ohio State University, attended.

Lewis A. Jones spent July 14 and 15 inspecting the work program of the five CCC drainage camps operating in Delaware and Maryland and conferred with camp supervisors on fiscal matters.

Louis R. Heuper reported to the Washington office for duty as an Engineering Aide, July 6, and was assigned to work in the Division of Drainage. He will take part in research activities being conducted in cooperation with the Civilian Conservation Corps drainage maintenance program. He is a civil engineering graduate of the University of Maryland, class of 1937.

On June 9 John C. Cotton left for an extended trip in Ohio, Indiana, Kentucky, Illinois, Iowa and Missouri to confer with drainage

research engineers and CCC engineers conducting stream runoff and channel measurements to determine coefficients for use in hydraulic formulae for the flow of water under varying channel conditions. He will also see engineers in the Louisiana, Delaware, and Maryland camps during July and August.

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The following transfers have recently been made in the Division of Mechanical Equipment: Frank Irons from the Japanese Beetle Laboratory at Moorestown, N.J. to the Toledo, Ohio office; E.M. Dieffenbach from Albany, Ga., to the Toledo office; A.H. Graves from Toledo, Ohio to Columbus, Ohio, from which point he will carry on his work on the Farm Operating Efficiency Project. E.M. Dieffenbach is assisting with the grain storage project in the vicinity of Toledo.

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G.A. Pascoe of the Department of Industries and Commerce of New Zealand, called at the office of the Division of Mechanical Equipment and discussed farm machinery problems.

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Claude Culpin, Agricultural Engineer, of the College of Agriculture, Cambridge, (England) University, spent a few days at the Bureau discussing various phases of agricultural engineering as they might apply to England. He left July 4 by automobile for a trip of several weeks throughout the United States during which he plans to visit a number of the Agricultural Engineering Experiment Stations. He reported a profitable three-day session at Auburn, Ala., where he discussed with Mr. Randolph and others the work of the farm tillage machinery laboratory.

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While on leave in the East E.M. Mervine spent two days at the Washington office discussing the sugar beet project and a proposed weed control project.

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G.A. Cumings recently inspected the fertilizer placement experiments in Ohio, Michigan, New York and Pennsylvania. Crops grown are potatoes, soybeans, navy beans, sugar beets, cabbage, tomatoes, celery and tobacco. The new pasture fertilization tests were also observed.

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W.H. Redit was in New York the latter part of June on fertilizer placement work with cabbage. He made arrangements for the celery work and a new fertilizer drill for the pasture tests was purchased.

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Alterations of a two-row celery transplanter have been completed by L.G. Schoenleber and D.B. Eldredge, Fertilizer hoppers and shovels were mounted independently of each other so that two treatments, involving different fertilizer rates and placements, may be applied simultaneously. The planter was taken to Wolcott, N.Y. where two placement experiments with celery were started.

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Alterations are being made to the manually fed transplanter for use with cauliflower on Long Island. The kale and spinach drills intended for the work at Norfolk, Va. during August and September are being put in shape for use.

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On June 14 and 15, C.K. Shedd went to North Platte, McCook, and other points in Nebraska in company with Profs. E.E. Brackett and Aldert Molenaar of the Dept. of Agricultural Engineering, University of Nebraska, to study the use of basin listers and other cultural practices in growing corn on Nebraska farms. Basin listers are in use there this year for the first time. These machines were found on farms near McCook and as far east as Central Nebraska. On slopes up to about 3 percent basins were successful in controlling run-off resulting from rains of 2 to 3 inches falling within one hour. On slopes over 3 percent the University Extension Service recommends contouring the rows. Contour listing without basin forming was observed on a number of fields and had evidently retarded run-off to some extent but had not been entirely effective.

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J.R. McCalmont installed equipment for measuring pressures in a silo containing hay and molasses silage at the Beemersville, N.J. Branch Exper. Sta. The observations of pressure are made by members of the Experiment Sta. staff. At last report, with 30 feet of silage in the silo, an outward pressure of approximately 700 lbs per square foot on the lower door was registered.

A.H. Senner returned from California where he consulted with the staff of the Agricultural Engineering Department regarding orchard heater problems. Upon his return he was operated upon for a ruptured appendix but is getting along nicely at the Union Memorial Hospital, Baltimore.

W.H. McWilliams is on temporary appointment, to work under Mr. Hukill's direction on an instrument for measuring the comfort conditions of farmhouses.

Wheat Storage

Kansas: W.R. Swanson reports that the 30 experimental bins used in wheat storage studies at Hays, Kans., have been filled. The set-up has been expanded to give a much wider range of observations than last year. On account of hot, dry weather it was not possible to obtain suitable wheat in the vicinity of Hays and 3 carloads of wheat of the desired moisture content were shipped in. No farm bins containing moist wheat have as yet been located. Prof. F.C. Fenton, Kansas State College and Wallace Ashby visited this project while the bins were being filled.

Illinois: Twenty experimental bins at Urbana have been filled and observations started under direction of Thayer Cleaver. At this station there was considerable difficulty with high moisture wheat and wet weather. No farm bins for study have as yet been located.

Ohio-Michigan: According to E.M. Dieffenbach the selection of farm bins in northern Ohio, in cooperation with Mr. Prue, Federal Grain Supervisor at Toledo, and R.C. Miller, of the Univ. of Ohio, is completed and selection of bins for study in Michigan in cooperation with C.H. Jefferson is well under way.

Maryland: B.M. Stahl states that filling of the 23 experimental bins at College Park, Md., is almost completed. Geo. C. Burkhart, assistant to Professor Carpenter, is representing the University of Maryland on this project.

North Dakota: The experiment bins at Fargo have been completed by F.C. Kelly. Wheat probably will not be available before the first of August. He is developing an experimental drier which will be tried out during the harvest.

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